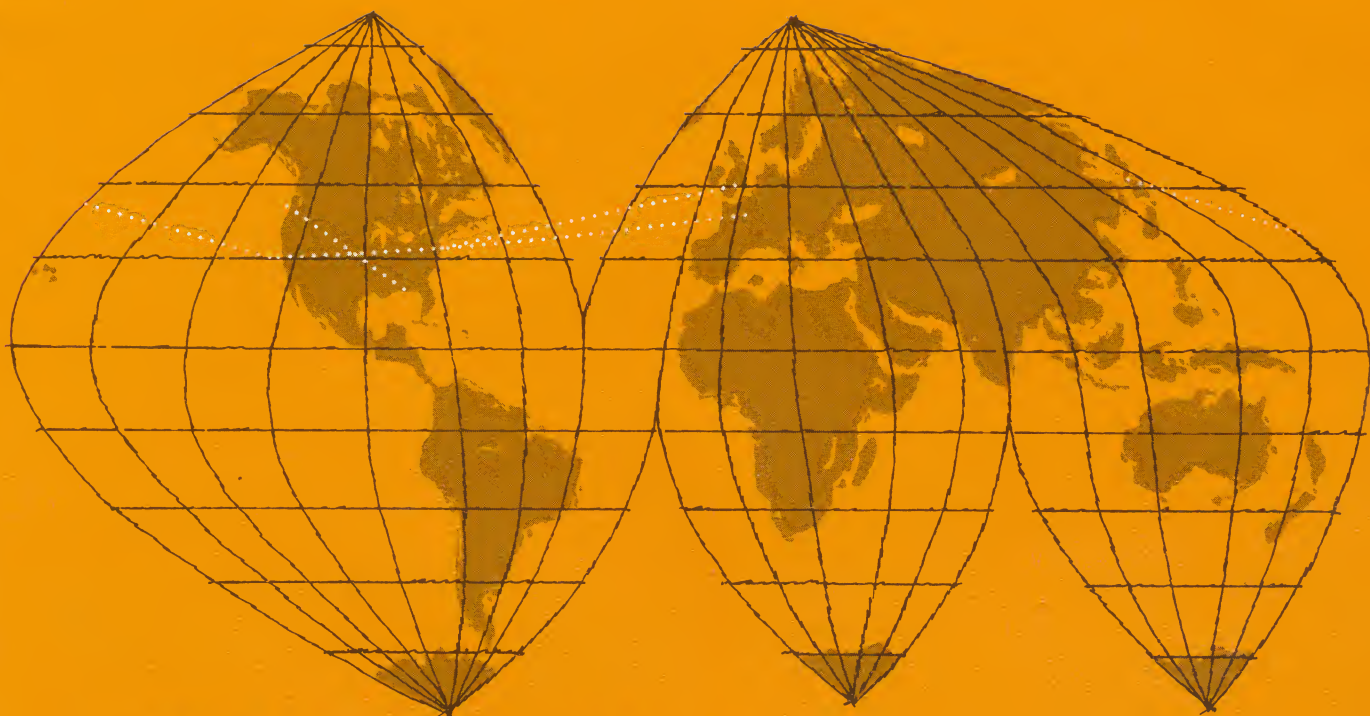


DATA SETS



RIXON
ELECTRONICS, INC.

2120 INDUSTRIAL PARKWAY, SILVER SPRING, MARYLAND, 20904

TECHNICAL SUMMARY: RI

Rixon Electronics manufactures a complete line of data sets (modems) to provide the ideal data transmission unit for any computer system. These nine basic sets are used in a wide variety of industrial, business and government applications today. By providing a range of data transmission speeds from 150 to 4800 bits per second as well as other benefits which are discussed in this bulletin, users achieve new efficiencies and economies. The sets are compatible with all EDP equipment with RS-232B interfaces and use leased voice grade 3 KHz circuits as the communication media.

What is the ideal?

In order to provide the ideal data set for any system requirement and configuration, the Rixon data set product line permits the selection of a unit employing any one of the three basic modulation techniques known today. . . . AM Vestigial Sideband, Frequency Shift Keyed and Phase Shift. Each has inherent advantages. Briefly, they are:

The AM Vestigial Sideband (VSB) modulation technique economically permits the most bits per second per cycle of the communication circuit bandwidth. This gives you higher data transmission speeds. All Rixon Sebit series data sets employ the VSB technique.

The simplicity of the circuitry for data sets employing the Frequency Shift Keyed (FSK) modulation technique gives you a reliable, low cost modem for speeds up to 1800 bits per second. The low cost factor makes the FSK data set ideal for low and medium speed systems. The Rixon FM-12 and the FM-150 use the FSK technique. Other sets using FSK techniques are under development.

The Phase Shift Keyed (PSK) modulation technique provides high tolerance to delay and amplitude distortion. It permits data transmission over switched or dedicated telephone circuits without adjustments. Also, the fast turn around time makes phase shift modems ideal for use in polled computer systems. The PM-24 uses the Phase Shift technique.

Rixon data sets can be used to transmit data over either telephone, cable, microwave, UHF, VHF or other 3 KHz voice frequency communications circuits. The most commonly used circuits are Type 3000 telephone channels for data transmission available from the Bell System, independent telephone companies and other communication common carriers such as Western Union. The technical characteristics of these channels are specified in Tariff FCC 260, "Private Line Service." To permit use of these channels Rixon sets comply with tariff regulations that provide for use of customer owned modems with telephone company facilities.

RIXON DATA SETS

Standard interfaces

These sets are built to the Electronic Industries Association RS-232B computer interface standard. This standard provides for uniform interconnections, operating levels and impedances between the data set and communication terminal, processors and peripheral units. It insures compatibility between the modem and the data terminal equipment regardless of the manufacturer. Rixon sets are being used today with Burroughs, CDC, GE, Honeywell, IBM, RCA, Univac and other systems. MIL-STD-188B interface options are also available for military applications.

High reliability

Rixon data sets are designed to the commercial equivalent of military specifications. Exceptionally high operating reliability of the modems has been verified by controlled measurement and field experience. The measured mean time between failures for the Sebit-24B has been verified to exceed 8000 hours. Similar MTBF's have been observed for other models. As with all Rixon equipment, the data sets have the standard EIA one year warranty on labor and materials.

Tailored to your needs

Modular construction makes it easy to incorporate special features and options so the data sets can be tailored to specific applications.

Most models are assembled from standard Rixon DD modules, self-contained units devoted to specific system functions. A set can be as basic as the Sebit-24M which contains only five DD modules. Higher speed sets normally require phase corrector, code converter and other modules. The sets are usually supplied for mounting in a standard 19" rack. They can be delivered in free standing, computer style cabinets or with enclosures suitable for shelf mounting.

Rixon data sets that do not employ DD construction techniques are the FM-12 and FM-150. Made up of printed circuit card modules, they are ideal for installation in OEM assemblies. These data sets are also packaged for desk top and shelf use as shown in the FM-12 and FM-150 illustrations or for mounting in a standard 19" rack.

Diagnostic capability

A diagnostic capability can be built in or is included in all Rixon data sets. This insures optimum system operation, helps isolate operating problems and simplifies maintenance.

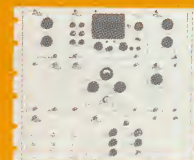
For sets built up with DD modules, status indicator (SI) and monitor oscilloscope (MO) modules make up the diagnostic package. The SI indicates an alarm if a system or data set malfunction occurs. It is also used for test functions. The MO is used to isolate malfunctions within the data set.

SPEED
Characters per Sec.
(8 bit characters)

600
Characters
per Second



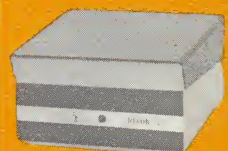
450
Characters
per Second



300
Characters
per Second



150
Characters
per Second



DATA SET MODEL	MAXIMUM DATA RATE Bits per Second	MODULATION TECHNIQUE	LINE REQUIREMENT ²	POWER REQUIREMENT	SIZE
Sebit-48M	4800 bps	AM Vestigial Sideband	Type 3005 (4C)	400 Watts	19" wide x 15-3/4" high x 16" deep
Sebit-36M	3600 bps	AM Vestigial Sideband	Type 3004 (4B)	400 Watts	19" wide x 15-3/4" high x 16" deep
Sebit-24M	2400 bps	AM Vestigial Sideband	Type 3003 (4A)	60 Watts	19" wide x 5-1/4" high x 16" deep
Sebit-24B	2400 bps	AM Vestigial Sideband	Type 3003 (4A)	115 Watts	19" wide x 8-3/4" high x 16" deep
PM-24	2400 bps	Phase Shift	Type 3003 (4A)	75 Watts	10" high x 16" wide x 17" deep
Sebit Dual-12M	Two independent channels at 1200 bps each	AM Vestigial Sideband	Type 3003 (4A)	100 Watts	19" wide x 10-1/2" high x 16" deep
FM-12	1200 bps ¹	Frequency Shift Keying	Type 3003 (4A)	6 Watts ³	12" wide x 6-1/4" high x 11" deep
FM-150	150 bps	Frequency Shift Keying	Type 3002 (4)	6 Watts ³	12" wide x 6-1/4" high x 11" deep
FM-150B	150 bps Full Duplex On Two Wire Circuit	Frequency Shift Keying	Type 3002 (4) Two Wire	6 Watts ³	12" wide x 6-1/4" high x 11" deep

NOTES: 1. Can operate up to 1800 bps over a 4B circuit. 2. Telephone channels for data transmission specified in TARIFF FCC 260. "Private Line Service." Rixon data sets also comply with tariff regulations that provide for use of customer-owned devices with telephone company facilities. 3. With internal power supply.

THE BENEFITS RIXON DATA SETS CAN BRING TO YOUR SYSTEM

Rixon data sets offer users a number of time-saving, cost-cutting benefits for their computer systems. Basically, these benefits can be realized in three ways.

Higher Transmission Speeds

By increasing data transmission throughput, off line time can be increased, communications circuits used more efficiently and computer operating personnel can work more effectively.

Lower EDP Costs

Through better utilization of equipment, communication lines and computer personnel, Rixon data sets will reduce many of your continuing out-of-pocket expenditures.

Lower Communication Costs

The readily available voice grade private data lines, which the Rixon sets can utilize, are the most economical communication media for many systems. The data sets can also be used on undersea cable, microwave, troposcatter, UHF and VHF circuits.

A Midwest computer user was transmitting data over one of his communication lines 23 hours a day. It appeared that additional lines and terminal equipment would be needed to meet the growing data transmission load.

Then Sebit-48M data sets were installed. The increased throughput eliminated the need for the additional lines and terminal equipment. Data transmission time was cut to 12 hours a day.

The resulting increase in off line time brought some additional benefits, too. A small scale processor that had been leased to handle the work overload at a remote terminal was turned back to the manufacturer. The entire schedule could be handled by the faster processing units that had been tied up in communications functions. At the same time, overtime paid to computer center personnel was reduced.

In another system there were simply not enough hours in the day to transmit all data. So magnetic tapes were shipped by air every day from the originating center to the processing site. When Sebit-48M's were installed, all data could be transmitted over the phone circuits. So now data moves faster and tape shipping costs are eliminated.

While speed increases may bring important economies to many users, there are benefits to be gained from Rixon's lower speed data sets, too. For instance, the purchase price of the FM-12 compares very favorably with the leasing costs of equivalent common carrier data sets. The FM-12 can pay for itself in a year or less in many installations.

Obviously, the specific benefits and savings that can be realized will vary from system to system. A Rixon applications engineer can easily show you what you can expect if you give him just a few facts and figures about your system.

In addition, ask your computer manufacturer how the Rixon data sets will let you utilize your EDP equipment more effectively. His knowledge of your equipment's communication capabilities may reveal some additional benefits that you can enjoy by using Rixon equipment. Also, talk to the data communication consultant of your local telephone company. He can provide all the information you need to order the proper telephone circuits. By bringing these people into the picture, you will achieve an optimum data communication capability at the lowest cost.

For application information and prices contact:

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